

PUBLISHED EVERY WEEK

AT \$1.00 PER ANNUM.

ESTABLISHED IN 1861

AMERICAN BEE JOURNAL

THE OLDEST BEE-PAPER IN AMERICA



37th Year.

CHICAGO, ILL., FEBRUARY 11, 1897.

No. 6.



"Price of Comb Honey vs. Extracted."

BY G. M. DOOLITTLE.

It is needless for me to say that I read the American Bee Journal with great interest, for it is indeed a "house full of meat." But there is now and then a thing which I read with more interest than I do others, and one of these things which has interested me exceedingly, is found in the report of the Illinois State Bee-Keepers' Convention, as given on page 22, under the above heading. The original question read, "How much per pound should consumers pay for extracted honey of the same grade, when comb honey sells to the consumers at 22 cents per pound?" But in putting the question to the convention, Dr. Miller changed it from the original to, "At what price per pound for extracted will you be willing to change from comb honey at 22 cents, to produce extracted honey?" Then came answers of 10 cents, 11 cents, and 12½ cents—one being in favor of 10 cents, four in favor of 11 cents, and four in favor of 12½ cents.

Now, I have been at a loss to know on what grounds the one calling 10 cents as right, based his calculations. Taking into consideration that there is greater value in the apiarist's labor, (or any which he may hire) in the summer months than in the winter months, and that the larger share of the labor when working for comb honey comes in the winter and fall months, while the labor in producing extracted honey comes very largely during the summer, I have always believed that the practical value of labor per colony differs very little between producing extracted and comb honey. If this is a fact, and I hardly think it will be disputed, then the one answering 10 cents must have argued that he could produce more than double the amount of honey in the extracted form, from a given number of colonies, than he could of comb honey. Does any one believe this possible, and have that extracted honey of the same "grade" as the comb honey? I do not.

Then if we are right in the above calculations, the four that said "11 cents," believed that just double of the same grade of honey could be produced in the extracted form that could be had in the comb form. Again, I ask, does any one agree, outside of those four? I, for one, do not.

Then, the last four say, "12½ cents." They come a little nearer to my figures, but I consider that they are much out of the way. From the years of experience which I have had, if we would produce extracted honey of the same grade (and this was the original question) as comb honey, said honey must stay on the hive till fully ripened or sealed over, the same as the comb honey; for it is not admissible to take that from the hive before it is sealed over. Remaining thus on the hive, I never have been able to obtain more than a quarter more in extracted honey than in comb honey; but when extracting the honey every third day, or before scarcely any was sealed over, I have been able to double the number of pounds over comb

honey; and when leaving till partly sealed over, as was the custom when the extractor first came to notice, I could obtain fully one-third more. But the honey is to be of the same grade, so I have only a quarter more in pounds for the same value in labor, to figure on. Hence, as a quarter of 22 cents is 5½ cents, which taken from the 22 cents would leave 16½ cents, we have this as the figure at which we can sell extracted honey of the same grade, when comb honey is selling at 22 cents.

If I have made any mistake in this figuring, I should like to have some of the readers of the American Bee Journal show wherein, for in these things lie our "bread and butter," quite largely.

At this point, Mr. Baldridge notices that the convention had drifted away from the original question, (as bee-keepers are very prone to do, and in thus drifting they almost always drift onto something often of more importance than to have stuck to the original question) and so rises to a point of order, and calls for the original question. Again, Dr. Miller, with his fatal "don't know," (which, as a rule, always brings our something unique, whether at a bee-convention or in the bee-papers) tries to state the question, but this time he gets it thus: "When comb honey sells to consumers at 22 cents per pound, how much per pound should consumers pay for extracted honey, of the same grade?"

Now we have the thing in a still different light, and in that light I am going to shock the readers, undoubtedly, by saying, *Just what the apiarist asks for his extracted honey. Why not? What is there to hinder? Have I not a perfect right to charge just what I please for my production? And as I now have my honey in a shape where it will keep for years and years, up to centuries, why shall I not fix whatever price I please on it, and cease producing any more till I have sold what I have on hand, at figures placed to suit my station in life.*

But I am met with, "Some one will undersell you."

Well, then I will take Mr. Baldridge into my confidence, and I will, with him, form a corporation, and we together will influence others to go in with us, till we have a monopoly of all the honey in the extracted form in the United States. And then, as time progresses, if Canada interferes, we'll influence Congress in our behalf, and that body, together with the Senate and the President, will give us a protective tariff so high that the Canadians cannot afford to pay it, and thus they will not interfere to any great extent. But as those Canucks are a determined set, it will probably be better to take Mr. McKnight and a few others in with us; and then we'll go over the water and get Messrs. Cowan, Gravenhorst, Tipper, etc., till we can control the extracted honey, and make our price for it, throughout the whole world. Now we can control the production, and thus maintain a price, just as high as it is possible, and not have the seventeen hundred million people of the earth go to using something else in the place of our extracted honey. Is this not a right answer to that last question of Dr. Miller's? If not, why not? It is only in line with the California Bee-Keepers' Exchange project, and such men as Prof. Cook, Dr. Gallup, J. H. Martin, and others, whose names I love, tell us said Exchange is to our interest.

If any whose names I have mentioned think there is any flaw in this plan, will they please point it out? for we can only succeed by a concert of action, a unity of purpose.

But this article is already too long, and I have not said half what I wish to say, so I will defer the rest to some other time. Meantime, I request that the reader go carefully over all that was said on pages 22 and 23, under the heading,

"Price of Comb Honey vs. Extracted," for there is much there which is of profit to all who read it, if they will only put their best thought into the matter. Onondaga Co., N. Y.



Age at Which Young Bees Work Outside.

BY B. J. C.

During the summer of 1895 I made some experiments, to determine the earliest age at which the young honey-bee can fly out and carry food or honey into the hive. My attention was called to the subject as follows:

I had four very strong colonies of Italian bees, and one morning at the commencement of the basswood honey-flow I noticed that the ground in front of these hives was thickly strewn with young bees, which, from their appearance, I supposed to have been not more than 24 hours out of their cells. They were jumping along in grasshopper fashion; about the third or fourth jump they would rise and fly away. This continued for three or four days. At first I thought this an unnatural procedure, but when I saw those young bees returning to the hive loaded almost to their utmost capacity with food, I concluded that their procedure was both natural and reasonable, for the season was bad for the bees, and honey scarce. So they were determined to gather it "while the sun shined." After a careful investigation, I was confirmed in my conclusion.

One of the above-mentioned hives has been, for almost three years, on the window-sill in my room, near my writing table, and when the sun shone through the window, and the rays would fall directly into the hive, I frequently removed the cover to make observations. As the rays of the sun kept up the temperature of the hive, the cell-builders would continue their work for a short time, but as they appeared to get the material from a cluster of bees on the inside top of the cover, I would replace the cover as soon as I had observed the kind of bees at work on the cells, which appeared to be all old ones. I also observed that the old bees, in some cases, used force to compel the young ones to fly out.

As I could not determine the exact age of those young field-workers, and what they effected, I continued my investigations by weighing the hives. The four which displayed so much energy tipped the scales at 100 and more pounds, while the others did not weigh more than 30 or 40 pounds.

To settle the other point in question, I sent to a queen-breeder and procured six yellow queens, one of which I put into a strong colony of blacks, Aug. 17, 1895, from which I had removed the black queen the day previous. Twenty-three days later the young yellow bees were out in front of the hive. The next day I made about eight gallons of sugar syrup and put it in the feed troughs; as there was not much abroad for them to get, they were soon at work on the home supply, and the three and four days old yellow bees were doing their share of the work—about two to one in favor of the blacks; but the following day I think the yellow ones had the majority.

The next day—the 26th after the yellow queen had been put into the aforesaid hive—the last black bee had disappeared, except four or five dead ones in the portico, and the young yellow bees were working as strongly as the bees in the neighboring hives.

I am certain, from the above experiments, that the young honey-bee is capable of doing field-work on the 4th day after issuing from the cell, and it is quite probable on the 3rd day. Also, that the yellow and black bees will not live long together in the same hive, unless the hive is large, and each kind has its own queen. Whether the blacks were expelled by the yellows, or whether they left on their own accord, I cannot say.

The case is different with the hives of Italian bees into which I put yellow queens, as they have up to the present continued to live in peace.

The above observations may apply only to the bees of this locality; for, if I mistake not, I read in some bee-papers that the young bee remained in the hive 16 days after issuing from the cell, and died of old age 45 days from hatching, which, I presume, applies only to the bees in the place in which the writer resides, as I am positive that the bees of northern Indiana have a longer lease of life, and do field-work at a much earlier age; and, from experiments and observations I am quite certain that not one in a hundred of the workers die of old age, but, like soldiers in active service, are swept off by sickness and violent deaths before their natural course is run.

St. Joseph Co., Ind.

California Bee-Keeping—Honey-Adulteration.

BY L. T. HARPER.

My wife and self came to California in the spring of 1893 (for our health) from southeastern Dakota, and after concluding to make this State our future home, I began to look around for a small investment, that would give me something to do, and a reasonably fair prospect of some income every year. I was told by a good many that had been in the bee-business a number of years, that they had never had a total failure of honey. I had had no experience with bees, except a few that I had in box-hives, with Quinby's book for an instructor, in southern Minnesota, in the years of 1873 to 1875; so I sent for "A B C of Bee-Culture," and went to studying up.

In February, 1894, I bought out an apiary of 96 colonies in good condition, with plenty of stores to carry them along until the spring blossoms. The apiary being in the foothills, 12 miles from this place, we moved right up there, so as to be able to give them all the attention they needed. We were told we would probably need about 50 more double hives than we already had, so we bought the lumber at a mill here ("sugar pine" as they call it), and had it worked up in shape to nail together; and by April 10 I had them all made up and ready for business.

But the business did not come that year. My son, who was to assist, staid until we saw there was not going to be any extracting to do, then took up other work. I staid with the bees until Aug. 1, not getting a pound of surplus honey, and but one swarm, but the bees gathered enough to keep them through until another season without feeding.

In the spring of 1895 we started into the honey season with 74 colonies, most of them in fairly good condition. I was taken sick in March, and was able to do but very little with the bees. My son did all the work (except a little help from me in swarming-time, and about \$18 worth of help in extracting), without having any practical experience, except the little he helpt me the spring before. The bees just about doubled in numbers of colonies, and gave us about 9½ tons of extracted honey.

The past year, 1896, you are aware Southern California had practically no honey. Some thought, early, that we were going to have something of a crop, and extracted almost all there was in the upper story. But I think nearly, if not quite all, had to feed that much back, and probably more, too. I know of no bee-keeper around here that has not, or will not, have to feed to carry his bees through.

THE ADULTERATION OF HONEY.

I have been very much interested in the discussion of adulterated honey. The more so, as I had a little experience a year or so ago in selling honey in South Dakota, Iowa and Illinois. I found no pure honey put up and sold by the jobbers; nearly every one seems to know that extracted (or "strained honey," as most of them call it) is being adulterated. But very few really know whether it is or not, unless they have the pure honey to make the comparison. To illustrate:

I stopt over night in a little town in South Dakota. At one table the next morning two traveling men and myself were seated. The griddle cakes were brought on, and one of the men took some of the contents of a tumbler that had a small piece of comb honey submerged in it, and spread it on his cakes. After tasting it, he remarkt that that was pretty fair honey. So I took a little to see just how much honey there was about it. I carried a small bottle for a sample in my breast-pocket. I handed it to him, remarking that if he called that good I would like to have him try mine. He poured out a little on his plate, and, after tasting it, said that he did not believe there was any honey in the glass except the little piece of comb we could see.

In Davenport, Iowa, I went into a grocery, and told the lady behind the counter that I had some California extracted honey that I would like to show her. She said she had some honey she bought just a few days before. She had it in a 6-quart tin pail, and a little taken out into glasses. I askt permission to taste it; then askt her to taste of the sample I carried. After doing so she lookt at me (with rather a sad countenance) and said: "I am afraid there is not much honey about that I have."

There are tons of bogus honey being disposed of in another way that I have not seen mentioned in the Bee Journal or elsewhere. There were men all over Iowa last fall operating as follows: They would go into a town and hunt up board in a private family where they could have the kitchen stove in the evening. They put 50 pounds of sugar into a boiler, and water enough to make a good syrup; and after it is well dissolved, they take four one-pound sections of

comb honey and cut it all up fine, and stir it into the boiler of syrup. Then at some stage they add tartaric acid to keep it from granulating (I am told). They start out in the morning with the syrup in a deep milk-can, with a long-handled pint dipper, and represent themselves as living in the country and as having "strained honey" of their own production to sell! They sold, on an average, in Waterloo, where I first heard of them, from 40 to 50 pounds a day, at 12½ cents per pound. They were selling the same in Davenport, when I was there.

I went into a grocery house in Rock Island, Ill., and saw quite a lot of glasses set up in a conspicuous place, markt "Honey." In some of them you could see a little piece of comb honey, and some none. Some of them were labeled. I askt the clerk if they sold much of it, and he said they had disposed of quite a good deal. It was not all labeled anything more than the word "Honey," but I pickt out one labeled as follows: "Pure California white clover strained honey; Franklin McVeagh, Chicago, Ill." You see I was curious to know just how California white clover honey tasted, and I must say that it does not have any of the flavor of the white clover honey east of the Rockies, and I am afraid that any one that buys it will "go back on" California honey—especially "white clover honey."

Riverside Co., Calif., Dec. 24.

[If there is one subject above all others that needs attention *just now*, it is that of honey-adulteration. We must have a national pure food law enacted mighty soon, or the business of pure honey production will be ruined forever. The shameless adulterators are constantly at work, and will so continue until compelled to stop by the enforcement of a rigid anti-adulteration law. The United States Bee-Keepers' Union has a big job ahead of it. It will require the united efforts and funds of all bee-keepers to win in this fight. But it is well worth undertaking—in fact, bee-keepers cannot afford to submit longer without soon finding their occupation gone.

What are you going to do about it?—EDITOR.]



Instinct or Reason in Insects—Which?

BY PROF. A. J. COOK.

Before the publication of Darwin's great book on the "Origin of Species," and prior to the dawn of the new light with which it illuminated all nature, it was almost universally believed, and as generally taught, that only man thought, planned, and reasoned—all the lower animals were governed by instinct. While some may have doubted regarding the actions of the higher vertebrate animals, no one thought it at all a question that the moving cause in the life-habits and economy of all invertebrate animals was instinct. It was taught in our natural history literature that the bird built its first nest with the same exactitude and in the same style that it built all its subsequent nests. Naturalists were even more sure that each species of ant, bee, or moth, was a sort of animated automaton, that always ran out its little round of life in precisely the same manner as all its ancestry had done before it. It was wound up at birth; and simply lived to unwind just as all similar forms have run down in all the long past.

Among the many good fruits that came from Darwin's new view of creation, was the huge interrogation point that it placed after this whole idea of instinct. Men wondered if it were true that animals below man were mere automatons. Animal psychology was brought into existence and the views held regarding the springs to action in the lower realms of life were soon reconstructed. Men learned that reason and intelligence, in the lower life forms, must be invoked to explain the phenomena that were brought to light by the deeper insight into animal habits and actions. Even a show of ethics, often however with dimmest coloring, was thought to be discovered by a close observation of the life-habits even of insect life. The great Romanes found that his dog could be taught to count; and the astounding performances of the ant-colony, kept and studied in his library by Sir John Lubbock in the intervals of his arduous Parliamentary labors, had led all readers of his fascinating "Ants, Bees, and Wasps" to marvel at the wondrous performances of these highest of hexapodous animals.

In the study of insects, we often discover methods of action that demonstrate not only mental traits of no mean character, but ways that strongly simulate moral actions. We also see evidence of sense perception that surpasses anything known to human experience. It is my purpose in what follows to call attention to some of these characteristics.

The codding-moth, parent of the apple-worm, which latter pest is familiar to all lovers of the apple everywhere throughout our country, is not high in the scale of insect life; yet it evinces no slight possession of business sense, and even observes one of the Ten Commandments. This little grey moth, hid by its very color as it rests by day on the russet bark of the apple-tree, flits forth at the dawn of nightfall, to drop her three or more score of eggs where her baby-caterpillars may find, even at birth, a full larder of most toothsome viands. The young forming fruit is now straight from the stem, with its calyx-basin uppermost. The persistent calyx-leaves seem like so many protecting stakes about this shallow basin. All below is smooth and precipitous. Any baby caterpillar would be safe in the wind-rockt cradle—the calyx-basin; safer because of the green calyx-leaves, which would gird it round and hold it in. The eggs might be wash off by rain or pickt up by bird or egg-loving insect, except that they were lodged in this same protecting basin, and hid by the same calyx-leaves. Even little Moses was not better concealed or more skillfully protected. Any such action by man, as the placing of these eggs, so warily and skillfully, would be praised as a fine example of wisdom and caution. But this is not all! As the little mother-moth peers into the calyx-cup to see if all is safe for the egg, she may perchance discover by sight of an egg, wee caterpillar, or burrow, showing that the little larva had already entered the fruit—that some sister had already pre-empted that egg-depository. She lays no eggs, but at once flits away to other fruit. She says in the most eloquent language—action: "I will not covet the wee fruit morsel, of my neighbor's little one, for my own yet unhatcht; I will respect its rights."

The plum curculio is a weevil or snout-beetle. The weevils are such beetles as have their heads prolonged into a snout or rostrum. At the end of this beak are their sharp jaws. The plum curculio wishes to place her eggs on or about the plum, so that baby curculio may enter and feed on the luscious plum pulp. Here there is no calyx-cup with a protecting crown of sepals—all is smooth, glistening rind. If she place her egg on the smooth plum peal, rain will wash it far from its base of supplies, or some hungry bird may snap it up. If she bore into the flesh of the growing fruit, the very growth of the plum will crush the delicate egg. She provides against either catastrophe, by inserting her beak and cutting a crescent, which hangs by the peel at one side. And into this she places the precious egg. Thus growth of the plum is stopt, and danger of the egg being crust prevented; the egg is firmly held, and is concealed from sharpest eyes of bird or insect. Such provision for safety of offspring we praise and admire, as marks of intelligence and civilization among our own kind; why withhold a similar meed of praise to the little, astute curculio?

In an article written for "Student Life" last year, I showed how the yucca-moth rolls up pollen and places it on the stigma of the flower, with no purpose so far as we can discover, except to fructify the blossom. If the flower was not thus artificially pollinated, no seed would develop, and the larva of the yucca-moth would starve. Here we have forethought and skill that is only matcht by that of the 19th century man.

We welcome the frugal, industrious, producing foreigner to America. We are beginning to consider seriously an interdict of the immigration to our land of all others. The bees were long our superiors in the discovery of this wise principle of political economy. Woe betide the bee whose temerity leads it to attempt an entrance into the hive of another colony, except it carry with it a full load of honey. In such case the other bees at once attack it, and usually death is the price of its venture. If, on the other hand, it enter fully stockt with provisions, it receives a hearty welcome.

The death rate in our cities is becoming greatly lessened in these last few years. The major reason is greater cleanliness. Decaying matter is burned or buried. Bees taught us this lesson, and have practiced beyond our latest and best performance for ages. Suppose a great bumble-bee attempts to pilfer from an open hive; the bees pounce upon him, and he is soon a corpse. They then lay hold of him, and attempt to drag him forth from the hive. If the entrance is too small, they will still tug away, till they have removed every vestige of hair. What then? They cannot remove it, and they cannot brook the presence of filth; so with their bee-glue they bury the offending corpse. I have also found the carcass of a mouse similarly entombed in this same kind of an hermetic sepulchre. Solomon might have said: "Go to the bee, thou sufferer, and learn of her, sanitary wisdom."

The ants as the highest of insects, furnish many and wondrous examples of wisdom, skill, intelligence and thought. Ants have long held slaves, have long kept domesticated animals—their milch cows—to minister to their wants. They

care for these as assiduously as we do for our kine. The ants plan their nests with reference to water, which is yet a thing of the future, when the entire land is dry and parcht. Then ants take their stored grain out to dry when it is wet by the storms, so that mildew will not destroy it. They clear land, plant and harvest crops, and even keep pets. They will permit any ant of their own family to milk their cows, but woe to the luckless ant from another tribe that attempts this petty larceny. Bees, wasps and ants will die for their home and kindred without a wince. If patriotism is among the highest of virtues, and sacrifice of life for country and kin the highest exemplification of patriotism, then shall we say that virtue is found only among the human species?

Hundreds of examples might be given of insect habits and economy that cannot be explained except that we grant these humble creatures of Nature the possession of intelligence.

I can only give one example to illustrate the wondrously delicate sense perception possesst by insects. I have reared a single female moth in a large room and have had over one hundred males of the same species come in through an open window, though the opening would hardly more than admit one's hand. There are cases on record where, in like case, male moths have come down a stove-pipe to gain admittance into a room. Professor Lintner of Albany, N. Y., told me that he reared a female moth in a closed room, and upon going out the door he saw a large number of the males flying about the house. This recognition must come through the sense of smell, yet I have never been able to discover the least odor. Physicists tell us that insects can hear sounds which are entirely inaudible to us.

May it not be, then, one of the missions of the study of these lower life forms to exalt our appreciation of their habits and character; and at the same time make us more humble and teachable?

Los Angeles Co., Calif.



Notes and Comments on Florida.

BY MRS. L. HARRISON.

This is the sixth winter that I've lived at this place, and during this time I've received many letters from bee-keepers, seeking information and asking my advice as to whether it would be best for them to move their bees to Florida, and come here to reside.

If I remember correctly (and I think I do), W. S. Hart, of Volusia Co., Fla., advised all such to come and visit the State and spend at least one season here before moving.

Whenever I sail around this lovely Bay, or walk in the piney woods, I see evidences of wasted money and labor. People came here, built a house, grubbed land, planted trees, and fenced them, and when their money was exhausted, left the country, not deeming it worth while to close windows or doors. While traveling I meet tourists who spend the winter in different parts of Florida, and they tell the same story.

I think that there are localities in Florida that cannot be surpast in the production of honey. Wewahitchka—otherwise known as the Dead Lakes—is one of them; and where the black mangrove thrives are others. W. S. Hart told the writer, before I came to Florida, that the best honey-districts were very malarious, and abounded in annoying insects, and my observations verify the truth of it.

There is a resident here who formerly lived in Ohio, and who traveled around that State introducing the Langstroth hive, and transferred combs from gums and boxes into movable frames. Two or three years ago this gentleman told me that honey could be produced here at a profit if it only sold for five cents per pound. On my return in December I askt him, "How are the bees?" He said, "Don't know. All gone." I inquired of others whom I knew had kept bees, and some said, "Worms ate them up."

I called one day at the home of the Ohioan, and went out to the apiary. It was a little paradise—enclosed with a low picket fence, and the tasty, painted Langstroth hives rested upon a platform under a shed. I opened the gate, and going within I knockt upon the hives. All the occupants had gone, except at one, where only a few answered my summons. This was the loveliest apiary I ever saw, with its pretty white fence, and quince trees growing within. What became of the bees? Starved! There was a severe drouth, commencing in April and lasting until to-day (Dec. 20), when a heavy rain fell. There were a few light showers only. I'm told that in the back country there was more rain.

There are many different kinds of soil here, located on a quarter section of land. I'm located between two salt water bayous; the soil (if you may call it thus) is yellow sand. Spruce pines nod their plumes, and shed their needles upon my roof. It is high pine land, with that wonderful plant—

saw-palmetto—interspersed with scrub oaks growing beneath. In the distance may be seen magnolias and ti-ties, showing that there is rich, black soil at their feet. In the silvery waters of the bay, the finest fish and oysters can be had—not for the asking, but the taking. On its banks may be seen the magnificent live-oaks, clothed in Nature's drapery—the moss of Southern climes.

Many pensioned soldiers have taken homesteads around this Bay. The inhabitants are generally from the North, who live here not because they can make money, but they have found health and freedom from pain, and can enjoy life better here than anywhere else. The water is soft, and can be had with driven wells; the air pure, balmy and resinous, from the piney woods. Many rheumatics have buried their crutches in the sand; catarrh washt away in the waters of the Bay, and kidney pains banish to another clime.

Washington Co., Fla.

CONVENTION PROCEEDINGS

Report of the Michigan State Bee-Keepers' Convention, Held at Mt. Pleasant.

BY W. Z. HUTCHINSON.

The Michigan bee-keepers held their annual convention Jan. 1 and 2, at Mt. Pleasant. This town is decidedly the home of that famous honey-plant, the willow-herb. Bee-keepers in that vicinity reported bountiful crops. Most of them had secured as much as 100 pounds of surplus comb honey per colony. Had it not been for the weather, which was rainy, making the roads very bad, the local attendance would have been very large. As it was, the convention was the best attended that a Michigan convention has enjoyed in several years.

Pres. Aspinwall called the meeting to order at 7:30 p.m., and then read the following paper on

THE WINTERING OF BEES.

In the realm of invention success is only obtained,
When each part and each movement bends to the end that is
gained.—L. A. A.

So in wintering of bees—hive construction—including thickness of walls, packing, ventilation, and entrance protection against drafts of cold air; also quantity and arrangement of the food supply and strength of the colony, are requisites bending to the one end—successful wintering. To exclude any one of these requisites will detract from uniformly successful results. With hives of the proper construction containing sufficient stores, bees may be wintered in the most exposed situations; and it matters not whether the hives face the north, south, east or west, like results will follow.

I shall treat this subject in reference to outdoor wintering, considering it as I do far in advance of any indoor method. The transcendent feature of outdoor wintering, is that of unrestricted flight; and with indoor methods, there is no compensation for its loss, even when the winters are extremely severe, and the periods of confinement long.

In considering the requisites for successful wintering, it may be well to note that success is frequently hinged upon very small things. The neglect in attending to the small affairs of life is sure to bring about disaster.

The matter of packing between hive-walls is not new, and with the most complete outfit in that line, disastrous results have occurred; hence, the skepticism in reference to successful outdoor wintering. The uncertain results attendant upon the use of well-packt hives, has given rise to questions as to the advisability of sealed covers, upward ventilation, passage-ways through the combs and above the frames—(the latter being afforded by Hill's device), size and shape of the frames. Such questions imply a want—a lack of some requisite.

Let us consider these points for a moment. With the accumulation of moisture, upward ventilation has been recommended as a means of carrying it off; and by the use of sealed covers, others claim that the animal warmth of the colony is best conserved. Again, others would have the combs pro-

vided with passage-ways through or above them to permit the outer portions of the cluster from freezing or starving.

For a colony to live in either a moist or cold atmosphere is at the expense of its vitality. If by an upward current the moisture is carried off, a corresponding evil presents itself in a lower temperature; and altho strong colonies may survive these conditions, fatalities will frequently occur among the weaker ones.

If we carefully consider the cause of moisture within the hive, possibly we shall be able to prevent it. The law of diffusion of gases in our atmosphere, also includes moisture which is known as watery vapor. Its diffusion is clearly manifest during damp weather, when it penetrates our homes, causing doors and drawers to be much swollen. Cool surfaces and cool currents of air cause its condensation; conversely, with a condition of warmth no moisture is visible, it being held in suspension. Within the hive, cold walls condense, not only that which is produced by exhalations of the colony, but by the general diffusion, bringing it from without.

Inasmuch as cold surfaces and cold currents of air cause condensation, the converse condition should prevent it. So, by the application of packing on all sides, as well as top and bottom, we largely overcome the surface condensation; and by a vestibule entrance, the currents of cold air are prevented. I use from six to eight inches of sawdust in the tray covering my hives, which not only prevents any upward current of air, but thoroughly retains the warmth. As additional security I use closed-end frames, which conserve the warmth of the colony between each range of combs.

With single-wall hives, the moisture must be carried off by a slow upward current of air, otherwise the sides and bottom-board will become saturated, compelling the colony to endure a condition which is disastrous to its vitality.

As to passage-ways through the combs, there is a difference of opinion. However, my experience leads me to conclude that they are unnecessary. It is true they afford an opportunity for an outer portion of the cluster to reach an adjacent inner comb-space, if the bees happen to be located directly over the passage-way, and the weather is warm; otherwise they serve no purpose.

It should be understood that the spherical form of the cluster is maintained by the tendency of each bee to reach the warmest locality. No knowledge of their location or condition as to queenlessness or otherwise is brought into requisition—it is simply a gravitating to the warmest locality, opposite an inner and larger circle of bees occupying an adjacent comb-space.

During the average winter weather passage-ways through the combs are of no avail, and the same is true of Hill's device, or passage-ways above the frames. Any space above the frames is contrary to nature; the bees invariably close all openings at the top of the hive, thus preventing any escape of warmth so necessary in cold weather. A colony to pass the winter successfully should remain clustered between the same combs they occupied in November until spring. When so clustered each comb occupied should contain sufficient honey for the entire period of confinement. This being advisable, no passage-ways will be required, providing the proper temperature is maintained.

I am still an advocate for ample winter stores. No colony should have less than 30 or 35 pounds. Let us bear in mind that with all the necessary precaution as to warmth and protection against drafts of cold air, a deficiency of stores is likely to cause disaster.

Modern hives with brood-chambers equal to the laying capacity of the queen, are considered best for obtaining surplus honey. Such, however, are not the best for wintering—the stores are usually insufficient. When all breeding is over for the season, the central combs are often deficient in stores. Here a good, practical feeder comes into requisition—one that can be used during the cold nights of October—one that will work successfully with thick syrup. Nothing is gained by compelling the bees to evaporate a large amount of water. I use about one quart of water to every 14 pounds of the best confectioners' A sugar. When early feeding is practiced thin syrup may be used; but later, empty brood-combs will necessitate further feeding.

I have touched upon feeding because it is a necessity with the limited comb surface of modern hives. With hives double in size, or much larger than the laying capacity of the queen, no feeding would be necessary in ordinary seasons. However, such would not be adapted to the production of honey.

L. A. ASPINWALL.

T. F. Bingham—Why must the bees have so much honey?

Pres. Aspinwall—The bees often eat out the honey from the central combs, unless they are well filled, and then if the

weather continues cold there is no opportunity of changing over to other combs. In the spring the bees breed up faster if there is abundance of honey in the hive. They are like human beings, if they have a good bank account they are not afraid to launch out and do business.

W. Z. Hutchinson—Did I understand you to say that you used 14 pounds of sugar to one quart of water? Quinby says 5 pounds of sugar to one quart of water for making feed for fall use.

Pres. Aspinwall—Yes, I use 14 pounds of sugar (confectioners' A) to one quart of water.

Mr. Hutchinson—How thick a syrup does it make?

Pres. Aspinwall—So thick that when it cools on top it is thick like candy. I feed it when slightly warm. It is fed in a feeder that comes right over the cluster. And, by the way, with such syrup as this, I don't care whether it is sealed or not. There is no advantage in giving bees a lot of water to evaporate. I feed until the bees will take no more.

Mr. Bingham—if 20 pounds of food will bring a colony through the winter, why give them more than that to keep warm?

Pres. Aspinwall—I am not sure that they do keep it all warm.

Mr. Bingham—I prepared my bees for winter last fall by furnishing each colony with 20 pounds of food, or rather, the bees and food weighed 20 pounds. If a colony had more than that amount it was taken away; if less, it was given enough to bring it up to 20 pounds. I expect that they will come through all right. I think it is actually injurious, many times, to have too much honey in the hive in winter. It is better to give the bees enough to bring them through the winter, and then feed them in the spring if any should need it.

Pres. Aspinwall—I don't want to be bothered with feeding bees in the spring. I wish to be able to prepare them for winter, and then not have to open a hive again, or look after them until the harvest approaches.

Mr. Hutchinson—I used to weigh my bees in the fall, and feed all of the colonies in which there was not enough food to weigh 20 pounds. I never lost any from starvation. I have weighed them when wintered in the cellar, and the average consumption was about 9 pounds per colony.

T. J. Fordyce—I winter my bees packt in planer shavings. I have it as thick as 18 inches on top. Colonies with a large entrance winter better than those with a small one.

H. S. Wheeler—My experience is the same.

Pres. Aspinwall—I am enabled to use a small entrance because I have an ante-chamber that catches the dead bees.

Mr. Bingham—My hive entrance in winter is only $\frac{1}{2}$ of an inch long, and high enough to allow a drone to be dragged out. But my hive has a rim under it. The rim is $\frac{1}{2}$ of an inch high, and remains there the year round. The entrance is above the rim, and thus it is not clogged with dead bees. I once used a deeper rim, but the bees built comb beneath, and I discarded it for the shallower rim.

Mr. Fordyce—I have wintered bees very successfully in the cellar. When brought out in the spring they were just about as heavy as when put in, in the fall. The stores were usually basswood and willow-herb.

Mr. Hutchinson—This matter of stores plays a very important part. The Wilkins sisters were very successful in wintering bees, and I have always thought that the character of the stores had much to do with their success.

Mr. Bingham—Fifteen years ago, when we were all losing bees, men living near these ladies lost bees, but they lost very few.

Mr. Hutchinson—if that is true, then their plan may be of interest. Each colony is packt in chaff on its summer stand. The chaff is from four to six inches thick on the sides, and perhaps six inches deep on top. Just over the brood-nest, above the packing, in the cover, is an opening 8 or 10 inches square. This is covered with wire-cloth to keep out the mice. Over this is a roof that keeps out the storms. Great care is taken that the entrances are kept free from snow.

POOR EXTRACTED HONEY.

Mr. Bingham called attention to some of the talk that took place at the recent Chicago, or Illinois, convention, in which bee-keepers were advised to pour off the thin honey or water that rises on the top of candied honey, allow the rest to "drain off" and then melt up the solid honey that is left, and the result will be something very choice. Mr. Bingham deplored the fact that such talk as this should be indulged in and be published, thus giving the impression that candied honey is usually found in this condition. Only honey extracted before it is ripe, or that has been improperly treated, is to be found in such a condition. We take a great deal of pains to put up our extracted honey in fine shape, with fancy, gilt

labels, etc., and then talk about improving the quality of our honey by pouring off the watery part and melting up the solid part! It would look as though some of those who are talking about extracted honey really don't know what good extracted is. If we are to hold our trade in extracted honey it must be of the finest quality; extracted only when fully ripened, and then shut up where it cannot lose its aroma, nor absorb water. When this is done there will be no more talk about pouring off the thin, watery honey that rises on top of granulated honey.

Next came a paper by Mr. T. F. Bingham, of Clare Co., entitled,

PRINCIPLES IN APICULTURE.

Owing to my peculiar relation personally to this subject, I shall be compelled to introduce my own name, which I beg you to excuse. I do this not entirely in an egotistical light, though I am proud of my inventions, but as a matter of history. We all wish to know how those things which have been a pleasure to us have come about.

The first practical embodiment of a principle is regarded as an invention. The person so embodying a principle is regarded as an inventor; for instance, Mr. Porter, the inventor of the bee-escape.

It is said that 4,500 years ago the Chinese computed accurately eclipses. If so, the ancestors of Confucius were not only an ancient people, but a studious people. The earth was supposed to be flat. People coasted about the ocean's shore in boats. Not until the 13th century was the magnetic needle sufficiently known to be relied on for any considerable voyage. Columbus made the first remarkable voyage of discovery in which the compass played so important a part.

The early practical management of bees seems to have made little progress except in the size and form of comb honey receptacles. Numerous bee-books and bee-hives have been patented, but the pursuit wore a mysterious and superstitious air. It was enveloped in traditions and beliefs. It had, however, made substantial progress. Until the invention of the hanging movable-comb frame, by the Rev. L. L. Langstroth, and the publication of his most excellent bee-book, "The Hive and Honey-Bee," no important embodiment of principle entered into bee-hive construction, and progress was slow and full of doubt and belief. His invention and research gave to the practical bee-keeper and student a book containing all that is known of the natural history of the honey-bee, and market and epoch in American apiculture. Supposed inventions sprung up like magic. T. F. Bingham, in 1866, embodied the movable-comb principle in the closed-end movable-comb frame. It was never popular, but it has survived. The lamented M. Quinby regarded the invention of such value that he embodied it in his hive, and the most extensive and skillful comb-honey producers in the world use it. James Heddon adopted it in a hive which is extensively used as a comb-honey hive.

The honey extractor, as applied to bee-keeping, was first embodied by Hruschka.

In implements of the apiary no one has gone through such diversified evolution as the bellows bee-smoker. Bellows bee-smokers lying flat on their sides were brought to this country by German bee-keepers before the invention of movable-comb frames. The lamented M. Quinby raised the horizontal German bellows bee-smoker to a perpendicular Quinby bee-smoker. The draft of the German and Quinby was probably about alike. The German had a vent-hole slide, which could be opened when not in use. The Quinby draft was through an open valve and the bellows. It is reasonable to suppose that either of them would lose fire if not frequently puffed, and that fire could only be maintained in either of them except by using dry, rotten wood or cotton rags.

The continuous direct draft or Bingham bellows bee-smoker embodied the natural draft principle of a common wood-stove, and in no respect differed from it. Of course, it would burn sound wood or anything else, just as well as any stove in your parlor or kitchen. Opposite this open draft, but separated from it, the exhaust of the bellows pointed directly into the open draft. The blast from the bellows was forced across this open space into the draft current which was continually supplying the air necessary for the fire. This arrangement not only forced the natural draft and the air contained in the bellows into the stove, but carried with it a stream of air which continually prest itself forward to fill the vacuum caused by the blast, thus forcing from the smoker perhaps twice as much smoke as the bellows contained air. The principle was re-enbodied in the "Simplicity" smoker and the new Quinby smoker, while in Europe and Canada it was copied without limit.

The honey extractor led up to the invention of the Bingham & Hetherington honey-knife. Careful analysis develop-

the fact that the sticking of flat knives in uncapping honey was due to the exhaustion of air under the blade. The new embodiment of principle developed a wide, thick knife, having a sharp, single beveled edge, upon which the knife rested, admitting air as freely under as over the blade—freely to both sides. It was copied in Canada and Europe.

It will be observed that while I have briefly alluded to the first embodiment of the principle underlying the various inventions cited, and with which you are all familiar, that the principle of the bent cap and cool handle first embodied by T. F. Bingham has not been mentioned. The principle has been copied as if it was a real invention in Europe and America.

In counting up the inventions pertaining to bee-keeping which have been long tested, weighed in the balance and not found wanting, inventions which no one has been able to improve, or improve upon, I find no other State has made so many valuable inventions since the invention of the hanging movable-comb frame by the Rev. L. L. Langstroth, as has Michigan.

N. E. Doane—I have used both the Crane and the Bingham, but I see no particular difference. The Crane has a hinged cover, and is more convenient for me, as the Bingham cover sometimes drops off and it bothers me to find it as my eyesight is poor. For people with good sight, I presume that would not make much difference.

Mr. Bingham—When bees are inclined to make trouble for the operator a great cloud of smoke coming from the windward is a great comfort in keeping away robbers. A smudge in a kettle or pan, set down to the windward is a great thing. The bees seem to realize that there is "something in the air." It is to meet this need that I have made a new smoker. I call it the "Smoke Engine." It has a 4-inch barrel.

Mr. Bingham had on exhibition one of his "Smoke Engines."

(Concluded next week.)

Questions AND ANSWERS

CONDUCTED BY

DR. C. C. MILLER, MARENGO, ILL.

[Questions may be mailed to the Bee Journal, or to Dr. Miller direct.]

Clarifying Honey-Vinegar.

Please say if you know how Mr. Cowan uses isinglass to clarify vinegar; and what amount to the barrel of 45 or 50 gallons. I have about 15 barrels on hand, and would like to learn a quick way to settle it—so would others.

"SKYKE."

ANSWER.—Sorry to say I don't know a thing about it. Who will help us?

Section Starters and Weights—Separators.

1. In putting foundation starters in sections (taking Dadant's foundation as a sample) do you use thin or extra thin for the upper piece? What weight for the lower piece?

2. I use Heddon cases for sections, with pattern-slats 2 inches wide for 2-inch sections. Can I change to 1½ section by using ¾-inch separators without changing bottom slats?

3. Your average weight of sections for your honey of 1896 was given in Gleanings at a little over 15 ounces each. With your system of using separators and two pieces of foundation, are the sections nearly all uniform, or do they vary much when filled?

4. With your experience with separators, would you advise others not using them, to make the change where the honey is partly sold in the home market, and some of it shipped to a distant market?

H. E. M., Wisconsin.

ANSWERS.—1. I use thin foundation for the upper starter, and have used the same for the lower, but it is more inclined to flop over than foundation a shade heavier. Foundation with high side-walls does best for the lower starter. I think

extra thin would hardly do at all for bottom starters. If made deeper than a half inch it would fall over badly, and if less than half an inch the bees would likely gnaw down a good deal of it. Of late there has been some talk about foundation with cells $\frac{1}{4}$ or $\frac{3}{8}$ inch deep, and if that ever comes on the market I think I should be willing to pay a high price for it to use as bottom starters.

2. I think you could, but I'm not very familiar with the matter. If you change from 2 inches to $1\frac{1}{2}$ you will very likely want to change to $1\frac{1}{2}$, and it may be well for you to think whether you don't want to change to $1\frac{1}{2}$ in the first place.

3. There is more uniformity with sections filled or nearly filled with foundation than where only small starters are used, and there is more uniformity with separators than without. But you will see that I'm dodging your question, and I hardly know how to answer it by saying yes or no. For I don't know for certain just what you may mean by "nearly all uniform." Very likely I'll come nearer making the right impression by saying they are not nearly all uniform. For altho the great mass of my sections this year kept somewhere near 15 ounces each, some of them were as much as two ounces less and others as much more, making a total variation of a quarter of a pound. But there's no certainty that next year will give the same average weight. If honey comes in with a rush the sections will be heavier than with a light flow. Sections may be more plumply filled out early than late in the season, and vice versa. There may also be a difference in colonies under precisely the same circumstances, but I'm not sure of this.

4. Yes, I believe I would. Sections used with separators don't look so plump and well filled out, but for shipping they are almost a necessity, and even for the home market it is much easier to handle sections that are separated without danger of damaging them.

I thank you for the kind words in your accompanying letter, which I assure you are thoroughly appreciated.

Questions on Wiring Frames.

1. How many of our bee-lights have seen, or personally know of, perpendicular wiring giving perfect satisfaction?
2. What objections are sometimes brought against it, if any?
3. How many wires are used?
4. Is the kerf practical with perpendicular wiring?
5. How many prefer horizontal wiring?
6. Is the kerf practical with that? E. P.

ANSWERS.—1. Many frames have been filled with combs built on perpendicular wiring that have given good satisfaction.

2. If the bottom or top bar should be light, they will be bent or curved toward each other by means of stretching the wires tight.

3. That depends upon the length of the frame. Enough so the wires shall be about $2\frac{1}{2}$ inches apart, but the exact distance is not important.

4. With perpendicular wiring you cannot use a saw-kerf in the top-bar in which to insert the foundation.

5. At one time, most of the wiring was perpendicular, but perhaps one way is used as much as the other at the present time.

6. The saw-kerf in the top-bar works nicely with horizontal wiring.

Number of Frames in the Brood-Chamber.

Does it make any particular difference as to the number of brood-frames in a hive? I have some box-hives, but there are only nine frames in them? I have noticed that most hives have either eight or ten frames.

I am much pleased with the American Bee Journal.

C. H. P., Nebraska.

ANSWER.—Very decidedly it makes a difference how many frames are in the brood-chamber. Many a wordy war has been waged as to what number is best, but perhaps no one would advise less than 5 Langstroth frames, nor more than 16. The great majority say 8 or 10, and very often to hear the discussions one would think that no other number could be used. Just why so few take the middle ground and adopt 9 frames is perhaps not easy to say. If half the number should say 8 was better than 10, and the other half should say that 10 was better than 8, it would seem the most reasonable thing in the world to conclude that 9 was about right. However, conditions and locations have something to do with it. As a rule, a larger number of frames are allowed for ex-

tracted honey than for comb. Altho the large amount of discussion as to size of hives has left the matter still unsettled, the probability is that it has made the general feeling a little more favorable toward the larger hives than it was.

It isn't entirely clear just what you mean by saying you have "box-hives" with frames in them. As generally used, the term "box-hives" means hives without movable frames in them. It is true that most movable-frame hives are boxes, however, and used in that way you might speak of box-hives with frames to distinguish them from frame hives with bodies of straw.

Importing Italian Queens.

I would like to import a queen or two from Italy next season. Can you give me the names of two or three extensive bee-keepers in northern Italy?

Can you sell me one or two good queens after they lead out a swarm next summer—queens two or three years old, and daughters of imported mothers? What would be the price?

INDIANA.

ANSWER.—After spending considerable time in searching I have failed to find a single advertisement of a queen-breeder in Italy. I have no queens to sell, nor at present have I any known to be daughters of imported mothers.

Packing and Shipping Bees.

Please give full directions as to packing and when to ship bees.

M. G., Kansas.

ANSWER.—The manner of packing depends somewhat upon the kind of hive, and to some extent on the season of the year. They can be shipped any time in the year when bees are flying. If the weather is comparatively cool, as in spring and fall, they do not need so much ventilation as through the warm months. There is little danger, however, of giving too much ventilation at any time. Just how the ventilation can best be given depends upon the hive, but with almost any hive you can have the entire top covered with wire-cloth, and that makes the colony safe against smothering. If the weather is hot, the bees need a supply of water on their journey, which may be given by means of a sponge or a roll of rags saturated with water and placed on top of the frames.

If the hive contains loose-hanging frames, these must in some way be made fast. This may be done by driving nails through the ends of the top-bars down into the end of the hive, but the nails should not be driven in their entire depth, leaving the heads projecting so they can be drawn with a claw-hammer.

When placed on the cars, let the frames run parallel with the track; on a wagon they should run crosswise.

Moving Bees by Wagon and Railroad.

I want to ship my bees about the last of April or first of May about 120 miles by freight. They have to be hauled 10 miles on a wagon to reach the loading station, and stay 24 hours in the car in transit. How much ventilation should they have at that time of the year, as it is quite cool yet and colonies not very populous yet here in Minnesota. They are in 8-frame Adam Grimm Langstroth hives, with a one-inch honey-board on top, and $\frac{1}{4}$ -inch bee-space between the brood-frames and honey-board. Would it do to cover 4 or 5 one-inch holes in the honey-board, also a one-inch hole at the rear end of the hive close to the bottom, with wire-cloth, and have the entrance shut up tight with a board? or would it be better to remove the honey-board and cover the hive with a piece of wire-cloth as big as the hive, with no ventilation at the bottom?

M. R., Minnesota.

ANSWER.—Either plan you mention will probably be all right, the one giving the larger ventilation being preferable. I have often hauled them a distance of five miles with only a large entrance for ventilation. But I think it is the Dadants that say it is better to have the entrance closed and have abundant ventilation elsewhere, for the bees being used to find their way out at the entrance will all crowd there and may be killed. You will do well to have a sponge, or a rag rolled up and filled with water somewhere in the hive—on the top-bars, if there is room—and when you change from the wagon to the cars you can pour some fresh water on it, if dry.

See "Bee-Keeper's Guide" offer on page 45.



GEORGE W. YORK,

Editor.

PUBLISHED WEEKLY BY

GEORGE W. YORK & COMPANY,

118 Michigan St.,

CHICAGO, ILL.

\$1.00 a Year—Sample Copy Sent Free.

(Entered at the Post-Office at Chicago as Second-Class Mail-Matter.)

Vol. XXXVII. CHICAGO, ILL., FEB. 11, 1897. No. 6.

Editorial Comments.

A Great Honey-Producing Country like Southern California, says J. H. Martin, of Los Angeles Co., is never entirely drained of its honey. Many bee-keepers supposed that owing to a total failure of the crop the past season, that honey would be scarce and command a higher price. But small lots keep coming forward, which shows that considerable honey is held over every year. It would require several total failures to strip the market of honey, and to even advance the price.

The Wisconsin Convention was held according to announcement, last Wednesday and Thursday (Feb. 3 and 4), and we had the pleasure of being present. It was a good meeting, tho the attendance was not large. We expect to publish a condenset report soon. Next week we will have something to say concerning our trip, and some of the good Wisconsin bee-keepers. The following were elected as officers for the ensuing year:

President—Franklin Wilcox, of Juneau County; Vice-President—Jacob Huffman, of Green County; Secretary—E. France, of Grant County; and Treasurer—Harry Lathrop, of Green County. All except Mr. Huffman were re-elections.

Granulated Honey and Sour Honey—We have received the following communication from a honey-dealing firm in Minnesota, dated Jan. 21, 1897:

The editorial comment on page 40 is as interesting to us as anything which Mark Twain has written for a long time, the only difference is that Mark Twain drew on the imagination, and you have drawn on the facts where misery loves company. Our firm has been getting experience as to granulation of honey at the regular local freight rates. We have a Dairy and Food Commission in Minnesota, as you are doubtless aware, and they are trying to earn their legislative appropriation, and are well qualified for the position. Any way, they are on our side, and against a certain new firm west of here, who ordered one case of honey from us, and received granulated alfalfa. This firm answered us that the honey was solid, and would have to be put up in better shape to fool the people with. As the freight out of that was less than a dollar, we thought it was one of the least expensive of our experiences in the same line, and have sent them your editorial, and askt them if they would not send us along some cigars! Now, Mr. Editor, if those cigars come, we will not say anything about the freight on the honey, but will divide up the cigars.

We would like to know how honey, which arrives in barrels and is sour, can be handled so as to make it merchantable. Perhaps we ought to offer to pay for this information, but we think if any experienced bee-keeper who is kind enough to

inform us on this, will realize that he is doing some shipper a benefit, he will not hesitate. Besides this, if we do not get the cigars, we will give an order on that new firm west, to pay for the information. But we are serious, as we have some sour honey here, and want to put it in shape. A. W. S.

We hope our jovial friend, A. W. S., will at once withdraw that request for "some cigars," if he expects us to help him out with them, for we are too old now to learn the use of the filthy weed in any form. How any man can find comfort in narcotics is beyond us. Aside from the financial waste, think of the injury to one's health! We hope the day may soon come when all men will cease to befog their brain and shatter their nerves with tobacco and strong drink. To our young men readers we would commend the advice of the noted John B. Gough—among his last words—"Young man, keep your record clean."

Now, to turn from one sour subject to another, what about the sour honey that A. W. S. asks about? It seems to us that heating it to a certain degree will nearly restore its original flavor. How is that? Are we right, or not? Will some one who knows, kindly furnish the desired information? We shall be glad to publish it.

Galvanized-Iron Honey-Tanks.—The Rural Californian says that the matter in relation to safe storing of honey in galvanized-iron tanks has been settled for California for several years. Every bee-keeper who produces any quantity of honey uses these tanks. Honey is allowed to stand in them, sometimes for several months, without detriment to the honey.

In that dry climate, where wooden receptacles shrink and fall to pieces, galvanized-iron plays an important part not only in the apiary, but for water-tanks and other purposes. If galvanized-iron is a settled success in California, it should be in all parts of the country.

New Bee-Papers Again.—In Gleanings for Jan. 15 is an interesting article by Dr. Miller, on "Defunct Bee Journals"—he mentions 16 that have "gone the way of all the earth," during the past 25 years. But he perhaps has been able to discover only about half of them, as many are entirely forgotten.

The question is raised whether or not the old and established bee-papers should encourage the new ones even to the extent of noticing their birth. The conclusion seems to have been reached, that it is wrong even to so much as notice their birth, as in all probability they can live but a short time, and the sooner they die the less money will their publishers and subscribers lose. We believe this is correct, when we consider that out of perhaps 50 bee-papers that so far have been started and finally stopt, in America, only about a half dozen to-day give any evidence of continuing for any great length of time. Perhaps a half dozen is putting it pretty high—but time will tell.

A bee-keeper in the West, who was at one time also a large supply dealer, referring to this subject, wrote us as follows, Jan. 24:

FRIEND YORK:—I send you by this mail a markt copy of a supply dealer's circular, and yet it was hardly necessary to mark any part of it, as it is all about one thing. I suggest that you make a few quotations exactly as they are, and then say that his 1897 circular shows a great improvement, and contains an announcement and prospectus of a new quarterly bee-journal that he proposes to establish. (Whew!) I presume you received one. Just think of paying 25 cents for four papers that emanate from such headquarters! Could you not say that you do not understand how people would thus throw away their money when a three months' subscription to any one of the well-established would give so much more for their money? But, really, I do not believe the thing will be laucht.

It beats all how some supply dealers do squirm under

their postage bills—and this is the mainspring to the whole outfit of these little journals that die "a horning." I have paid as high as \$600 in a year for one-cent stamps, and \$600 more for the circulars, addressing and mailing, and I have had my ups and downs, and made mistakes, but I always had grace enough to pay my postage and printing bills like a man, and leave the publishing business to publishers. ***

Why, yes, we will quote just two paragraphs from the "supply dealer's circular" referred to, taken from some advice on "Marketing Honey"—a very important subject. Here they are, exactly as printed by the would-be publishers of a bee-paper:

"This is a part of our pursuit that does not receive the attention that it should. The marketing of honey should receive as much attention as the production of it, what is the use producing honey if you can not sell it, this well surely be the result if the market continues to be fluxuated with honey placed upon it just as it comes from the hive; we have sold honey upon the city market more or less for a number of years, and find it goes about like this: you go to a grocer with a case of honey and ask him 15 cents for it, he laughs at you and says that his neighbor has bought some honey for 10 cents, and is selling it for what you ask him, of coarse he can not buy honey for what his competitor is selling it so down goes the price.

"Our extracted honey should be put up in either tin or glass packages, and neatly labeled with directions and producer; so few people understand the granulation of honey that it should never be sold without being labeled, and the label bearing explanation and directions, or an explanation verbally."

Oh, glory! Think of a whole paper gotten up in that style! And yet, people who exude such samples of literary ignorance aspire to be publishers! Get the smelling-bottle—quick!

Truly, the field of bee-journalism is not extensive enough to support very many bee-papers in the way they should be supported in order to be just half-way profitable. There is not a deserving bee-paper to-day that has quarter the number of paying subscribers it should have in order to attain the fullest success, and enable its publisher to get out something that will be a credit to the pursuit which it is desired to represent.

For a long time we have felt that we do a real kindness to a new bee-paper to simply say nothing about it when it starts, for, in all probability, in a few months—or at most a very few years—we'd have to write its little epitaph. Our most unselfish advice is: Keep out of new-bee-journalism, unless you have money you prefer to get rid of in that way in preference to burning it.

Physiological Effects of Bee-Stings.—A Dr. R. S. Lindsay, of Philadelphia, recently asked Gleanings for "information regarding the effects of bee-stings on the human system." In reply to the request, Editor Root wrote him as follows:

DR. R. S. L., Philadelphia—

Dear Sir:—The average bee-keeper is not at all affected by swelling after being stung. He experiences the same sharp pain, but no fever or other unpleasant effects follow after two or three minutes. The system seems to become inured. But occasionally, when the bee stings along a vein, there is an after-effect. We do not know to which school of medicine you belong; but the homeopathists use a great deal of *Apis mellifica* in the form of a tincture. We have been supplying Boereck & Tafel, of New York city, with bee-stings in lots of 10,000 at a time. We are supplied with a wide-mouth bottle holding about two ounces, and filled about two-thirds full of sugar of milk. A comb of bees is placed before a window, and from this comb the bees are plucked off one by one with a pair of tweezers, while another pair removes the stings, the latter dropping into the sugar of milk. The bee in each case is crushed immediately before the removal of the sting. In this way the stings are removed until the whole number are in the jar, when it is corked and sent to the parties named. The apiarist can usually work only three or four hours a day at removing the stings; and even then he expe-

riences pain in the eyes, and a sort of sickness from inhaling the odor of the poison.

As you see by the references below, there can be no question but that stings do relieve certain kinds of rheumatism; but just what kinds I am unable to say.

ERNEST R. ROOT.

The "references" mentioned were those where different writers had given their experience with bee-stings, which the Doctor will use in reading up on the subject. He is investigating the matter in a scientific manner, and will publish the results as he finds them, "giving the physiological effects of bee-stings, especially so far as they relate to the cure of various kinds of rheumatism." This will no doubt be very interesting.

The Weekly Budget.

MR. SIGEL BRAUTIGAM, of Grant Co., New Mex., says: "I will take the 'Old Reliable' as long as I am interested in apiculture; and no one interested in this occupation should be without it."

MR. B. S. K. BENNETT, of California, who publishes some reflections upon the character of Mr. Geo. W. Brodbeck, of that State, has made a retraction, and says that "as Mr. Brodbeck is willing to 'forgive and forget,' we trust the bee-keepers will do the same." We are glad the unpleasant matter has been "fixed up," and are pleased to give this notice of the satisfactory outcome of a disagreeable condition of affairs.

MR. A. D. WATSON, of Tioga Co., Pa., writes us as follows: "I am glad to see the American Bee Journal expose the dishonest dealers in honey. I have received some of their flowery circulars, soliciting shipments of honey, and if it had not been for the timely warnings of the American Bee Journal I might have been caught napping. Therefore, I think the price of subscription for the Bee Journal a very profitable investment. Long prosperity to the 'Old Reliable.'"

MR. S. C. SWANSON, of Minnesota, when renewing his subscription, wrote: "I like the American Bee Journal the best of any bee-paper I ever saw. Every one that has bees should read it. I am sure they will find that they never invested a dollar better in their bee-business."

DR. N. OSTRANDER, of Thurston Co., Wash., had this to say in a letter dated Jan. 29:

"The Bee Journal for Jan. 14 failed in reaching me. Until I met this number I never realized fully its value. I do not believe there is another publication in the country affording the same amount of valuable information for the same amount of money."

We are always glad to replace lost numbers of the Bee Journal, if we are notified in time. If you don't receive a certain number, better not wait more than two weeks after it is due before asking for another.

MR. WM. BEECROFT, of Canada, when remitting for 1897, said: "I am well pleased with the American Bee Journal, and think it is one of the best and cheapest of the kind published."

MR. S. T. PETTIT, of Ontario, Canada, has sent us a very kind invitation to stop off with him a few days on our return from the Buffalo meeting, next August or September. Now, we'd like to do that very thing, but really we cannot be away from the office here any longer than is absolutely necessary. We cannot afford to employ sufficient help so that we can very well leave for more than three or four days at a time. So it is quite out of the question to "go visitin'" as we'd like to do, and as several have already generously invited us. We appreciate the invitations very much, and only regret that we are compelled to decline them, for we would so greatly enjoy accepting if it were possible for us to do so.

MRS. R. A. FIFIELD, of New Hampshire, wrote thus when renewing her subscription for 1897: "I would not like to get along without the Bee Journal, for it is a great help. It comes every Friday."

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General Items.

Clovers in Good Condition.

The weather is fine, and the snow on the ground is five inches deep. I moved my bees 15 miles on the mudboat and did not lose a single bee. I find them in good condition, and there is a fine prospect for a nice honey-flow this year. White and crimson clovers are in good condition.

JOHN V. EMMERT.

Boone Co., Ind., Jan. 23.

Size of Apis Dorsata.

While looking at the respective engravings of the *Apis dorsata* (worker and drone), as given in Bulletin No. 1, by Frank Benton, the thought struck me that with all that had been said, pro and con, about this wonderful bee, there may have been something overlooked. By the pictures you would suppose they were very nearly the same size, while their length is the same. We have just been priding ourselves that we had overcome that drone business, by the use of full sheets of foundation. Now we don't want to fall clear downstairs after climbing so high.

Will some one who has seen it, or knows something of the bee, please give us a little light on the subject ?

A READER.

Report for the Season of 1896.

I commenced last spring with seven colonies, six strong in bees but no honey; the other was very weak in bees, and I had to feed them till the last of June to keep them going. Then basswood came. Talk about honey coming in ! I never saw the like. They filled a set of extracting-combs and all the spare room in the brood-chamber. I sent for six queens to an Illinois breeder; he sent me five by return mail; four were all right, but one was nearly dead when she arrived. The other came in due time, safe and sound.

I heard of a bee-tree being cut in the neighborhood, so I took advantage of that. I got the queen and introduced her all right. From the time basswood commenced till the middle of September the bees did well. I now have 13 colonies in the cellar, strong in young bees, and with plenty of good honey, besides all my family can use.

S. F. SKAIFE.

Dubuque Co., Iowa, Des. 30.

Poisonous Honey—Storing Over Brood

I read the article on poisonous honey, written by Dr. W. M. Stell, on page 626, 1896. Now, I came from Pennsylvania, and have seen lots of mountain laurel, and bees at work on it, and I never heard of the honey killing anyone. I think if the Doctor had taken the nectar deposited in the flowers, instead of the flowers and leaves, he would not have suffered so much pain, and worried so much about the boy. On the same principle, you might say a maple tree would not make sugar because you cannot make it out of the leaves; or a may-apple is poisonous because we know the roots are. I do not think our friend, the Doctor, can find a pound of poisonous honey in his yard, altho his bees workt on laurel, unless he fed them extract of the leaves.

In the "Question-Box" there is a question in regard to storing honey over the brood. I cannot agree entirely with the answers, altho by some of our leading bee-men. They say the bees try to get as far from the entrance as possible. I cut six bee-trees, and saw four more cut the past summer. In every case the honey was above the brood; in two cases there was a small cavity above the entrance, which was filled with honey, and the queen was below with her brood, some 10 or 12 inches. The comb above was old, and that below

Feb. 11.

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was new. Now if they had wanted to get away from the entrance, they had 10 feet of hollow tree below them.

Another one was on a limb running out at an angle of about 45 degrees, and was broken about four feet from the tree. The bees went in at the top, and built down—old comb at the top and new at the bottom, but brood below. These three trees were two years old. This proves to me one of two facts, or perhaps both. That is, the bees prefer to store above and drive the queen down and build below for her or it is a matter of choice with the queen. She seems to like the lower end and edges of the comb, but if comb honey is desired, and sections used, I do not think it will make much difference whether above or below, as long as they are handy for the bees to get to, as the queen does not like to climb around in such small spaces.

Atchison Co., Kans. E. S. SNELL.

Yellow Sweet Clover.

I don't believe the yellow sweet clover is a better variety than the white, but there may be more than one kind. I have seen the yellow growing in this city for years, but never saw many bees on it, and hence concluded it was of far less value for honey than the white. For that reason I have never tried to save the seed, nor spread its area. I saw plenty of it in the Salt River Valley, Ariz., in 1893, growing among the alfalfa, but the bee-men out there told me it was of no value as a honey-plant. They called it "sour clover." I think, and said they regarded it as a nuisance as a pasture-plant. Still, as before stated, there may be a better kind of the yellow variety, and the Nebraska lady may have it, but I am not yet convinced that all she says is true, or will prove true in other localities.

A. I. Root once said that white sweet clover was not very much of a honey-plant near his place in Ohio, but since then he has changed his mind. A single plant, or even a few plants in a place, may not secrete much honey, but a large plot of it may do much better. M. M. BALDRIDGE.

Kane Co., Ill., Jan. 20.

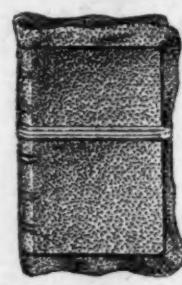
A Full Report for 1896.

I have been thinking for some time that I would send in my experience with my bees for the last season. I came to this place about Oct. 1, 1895. I saw there was quite a quantity of sweet clover growing here, but not much other bee-forage, neither did I see a honey-bee all the fall, nor hear of any being kept near here. I thought when it came spring I would get a few colonies and try what I could do. I bought 5 colonies in the winter, and they were delivered April 17—3 good ones and 2 that were light and weak in bees. I got some feeders and went to feeding the light ones, and after a long time I thought I could see an increase in the number of bees.

The folks told me that the sweet clover would bloom about the middle of June. I could not see much else for the bees to work on. There is very little fruit here, but lots of dandelion, and a good many willows, which bloomed full, but I did not see a bee on the willows. I saw the first sweet clover blossom May 23 (fully two weeks sooner than I expected), and three days later the bees were making merry over it.

My first swarm came out June 6; the 2nd swarmed June 17; the 3rd, June 25, and July 4 No. 3 cast a second swarm. No. 4 swarmed and went into No. 5, and staid there and loaf till they were reduced to a usual size colony, and I could not get them to do a thing in the super.

Now here is a question for Dr. Miller: Could I have divided that colony and given most of the frames and brood and all the bees that would stick to them and a queen, if I could find one, to another hive? And would it have been a success? Or how should I have workt them, and filled the other with frames of foundation? (I can't



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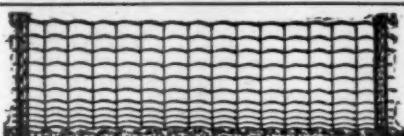
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get it just as I mean, but perhaps you can understand.)

I put all the new swarms into 10-frame hives, on full frames of foundation. I then set them on the old stand, turning the old hive away a quarter, and the third day having them straight side by side, and the 7th or 8th day removing the old hive to another stand. It reduces the old colony very low, and I don't know but too much so, for only two of the old ones work a bit in the supers. One filled about a dozen, and some partly-filled ones, and one filled 28 sections and some partly-filled ones.

This was my first season with sweet clover, and this is what it has been here: Bees were working on it strongly the first week in June, and there was a continuous bloom until the frost killed it. By the side of the railroad, where it was cut early, when it was about two weeks in bloom, and not very close, it came on again quickly, and very thick, and made a splendid forage for the bees till the very last. Where it was cut later, and the seed had ripened on the top branches, if cut close to the ground a great part of it was killed, but if cut higher it came on and made quite a show, but not nearly as good as that cut earlier. Where it grew unmolested it was from 4 to 6 feet high, blossomed freely, and after it was ripe and lookt all dry from a distance I could find blossoms near the ground, and bees at work all through it.

There was quite a show of golden-rod last fall, but the bees did not work on it till quite late. It was not to be compared with sweet clover here last year.

Now I will give the record of my first swarm: It was hived June 6, in a 10-frame dovetail hive, on full sheets of foundation. Three days after I put on it a super of 28 sections; the 25th the bees swarmed out. I hived the swarm in a 10-frame hive, on full sheets of foundation, and set it on the old stand. I took off the 2nd super of 28 sections, and took the 3rd super from the hive they came from, and put it on the last hive. Well, they filled the 10 frames and gave me 3 full supers, and one with 12 full and some partly full and capt over, and I have taken one full super of 28 sections, and one with 14 full sections, and more partly full from the hive they swarmed out of—that is, the hive I put them into when they first swarmed, June 6.

Well, I figure that the swarm of June 6 gave me 6 supers of 28 sections each, besides the 2 supers last taken off, which will more than make up all that was lacking in the first six, besides the partly finish ones; and then there are the 2 brood-chambers solid full of bees and honey. Result: 168 sections of honey and 2 good colonies of bees from one colony in the spring!

Colony No. 2 gave me 1 swarm and 124 full sections of honey, and a few partly capt.

Colony No. 3 gave me 1 swarm and 94 full sections, and some partly capt. It also gave me a second swarm that filled a 10-frame body, and is in splendid condition.

Nos. 4 and 5 gave me nothing but new experience, and to-day, as Mr. Dadant would say, "they are over-fat." I would like it if there was less honey and more bees. My 5 original colonies I increased to 10, and got 426 sections of honey. I sold the first half at 17 cents per section, and one-half of the last at 15 cents, and the balance I have on hand, and think there will be no trouble to get rid of what we don't use. How is that? Not bad, if you count the whole 5 old colonies in; but if you only count the three that did anything, it makes a good average.

Cook Co., Ill. EDWARD H. BEARDSLEY.

The Home Market and Quotations.

My report for 1896 is as follows: Spring count, 56 colonies, increase to 69, and took 7,000 pounds of honey of good quality, about 6,000 pounds being extracted. I bought 26 colonies last fall, making 55 colonies, which seem to be wintering well on the summer stands, packt in chaff.

My honey has all been sold (except three or four hundred pounds now on hand) in

For a knife that will cut a horn without crushing, because it cuts from four sides at once, set.

THE KEYSTONE DEHORNER

It is humane, rapid and durable. Fully warranted. HIGHEST AWARD AT WORLD'S FAIR. Descriptive circulars FREE.

A. C. BROSIUS, Cochranville, Pa.

40E13t Mention the American Bee Journal.

One Cent

invested in postal card will get my large Catalog of All Root's Goods. Send list of what you want, and get price.

BELL BRANCH, Mich.

WHEN ANSWERING THIS ADVERTISEMENT, MENTION THIS JOURNAL.



SEE THAT WINK !

Bee - Supplies! Root's Goods at Root's Prices.

Poulder's Honey - Jars, and every thing used by bee-keepers. Prompt service, low freight rate. Cat. tree. **Walter S. Poulder,** 162 Mass. Ave., INDIANAPOLIS, INDIANA.

WHEN ANSWERING THIS ADVERTISEMENT, MENTION THIS JOURNAL.

LUNG DISEASES.

30 years' experience. If your case is sufficiently serious to require expert medical treatment, address

T. F. BINGHAM, Farwell, Mich.

5Atf Mention the American Bee Journal.

BEST ON EARTH !!

18 years the Standard. The 4-inch "Smoke Engine." Is it too large? Will it last too long? Will save you lots of money and bad words. Send for Circular. 6 sizes and prices of Bingham Smokers and Knives.

T. F. BINGHAM, Farwell, Mich.

5Atf Mention the American Bee Journal.

IF YOU WANT THE BEE-BOOK

That covers the whole Agricultural Field more completely than any other published, send \$1.25 to Prof. A. J. Cook, Claremont, Calif., for his

Bee-Keeper's Guide.

Liberal Discounts to the Trade.

Mention the American Bee Journal.

CARLOADS

Of Bee-Hives, Sections, Shipping-Cases, Comb Foundation, and Everything used in the Bee-Industry.

I want the name and address of every Bee-Keeper in America. I supply Dealers as well as consumers. Send for catalogs, quotations, etc. **W. H. PUTNAM, RIVER FALLS, Pierce Co., Wis.**

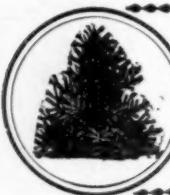
Mention the American Bee Journal.

PAID FOR Cash Beeswax

For all the Good, Pure Yellow Beeswax delivered to our office till further notice, we will pay 25 cents per pound, CASH; or 28 cents for whatever part is exchanged for the Bee Journal, Honey, Books or Seed, that we offer. If you want cash, promptly, for your Beeswax, send it on at once. Impure wax not taken at any price. Address as follows, very plainly,

GEO. W. YORK & CO.
118 Michigan st., CHICAGO, ILL.

Feb 11,



FEED YOUR BEES

WITH BASWOOD. PROTECT THEM WITH EVERGREENS.
100, 2 to 5 feet, \$10. 100 Baswood Seedlings, \$1. Delivered free. Other sizes just as cheap. 50 \$1.00 Bargains by mail. Millions to select from. Also Fruit Trees, Small Fruits, Vines, etc. Liberal cash commissions for clubs. Illustrated catalogue free. Good local Salesmen wanted. Address

D. HILL, Evergreen Specialist, DUNDEE, ILL.

4E6t Mention the American Bee Journal.

the home market. I am talking of starting an out-apriary in the spring.

Now a few words about bee-keepers getting new subscribers for the American Bee Journal. I think the honey market quotations in the Bee Journal is one important cause of not getting more subscribers. I dare not let any of customers, nor anyone in the vicinity of my market, see the Bee Journal, on account of the market quotations, which are very much less than we get at home. It is no way to create a home market. On several occasions my customers have gotten onto said quotations, and would say, "Why, here honey is quoted so and so." Then I would have to make a little speech to hold my customers.

Very much more might be said on this side of the subject, but I will not take more space now, but I consider this sufficient excuse for bee-keepers who have a home market, not scattering these market quotations in their locality.

B. W. PECK.

Ashtabula Co., Ohio, Jan. 23.

[Well, this is a new reason for not securing new subscribers—the first time we have ever heard it advanced. But we think Mr. Peck's "Peck of trouble" would be avoided if he were to solicit subscriptions only among those who already have bees. It is not our intention to urge starting more people in the bee-business, but only to get every present bee-keeper to take the Bee Journal. It will often be the means of educating them so that they will not break down a good home market, as they might do if without the Bee Journal. It would also help them to produce a nicer article, perhaps.—EDITOR.]

Bees Wintering Finely.

My bees are wintering finely. We have a big snowstorm to-day, and a big blow with it. Up to this time we have had no sleighing.

HENRY ALLEY.

Essex Co., Mass., Jan. 28.

Honey the Surest Crop.

I am wintering over 50 colonies of bees. My last year's crop of honey was fairly good. It does not seem to matter what kind of a summer it is, I am the surest of that crop of any. I have 80 acres.

I like the American Bee Journal very much, and it is the first paper that I open and read, usually, when receiving my mail.

HOMER SCOTT.

Oakland Co., Mich., Jan. 29.

Reviving Starved Bees.

I had an experience with a colony of bees that was starved to death, as it were. My brother, who lives one mile from me, last summer caught two swarms of fine bees, but one failed from some cause to get enough to winter on. I told him to feed them, and gave him the rule for feeding, as I had learned it through the American Bee Journal. But he failed to feed them till it was too late. On Dec. 22 I was there and asked him how his bees were getting along. We went upstairs where he put them; he opened the hive of the one that was short of stores, and the bees were dead, for all we could tell by looking at them. He was going to brush them off the comb, and melt

them up for wax, but I took some of the bees in my hand till they were warm, and they began to crawl around. I told him they were not dead, but he would not believe it. Nevertheless, he told me I could experiment with them, so I took them downstairs and warmed them. Then I followed the directions given in the "A B C of Bee-Culture"—sprinkled them with sweetened water. It was amusing to see the little things as soon as they were strong enough to carry feed to their less fortunate companions. I told his wife how to make the "Good" candy, and by the time it was made the bees came to life, as it were; they crawled upon the combs and were buzzing away as merrily as if they had had no mishap. We gave them the "Good" candy, and put them down cellar. The last I saw of them they were just roaring.

Ogle Co., Ill., Dec. 24. M. D. KINYON.

Winter Report.

My 68 colonies of bees in the cellar are quiet with the temperature at 38 degrees, while outdoors it was 10 degrees below zero this morning, and 15 degrees below zero yesterday morning. I also have some outside, with corn-stalks packed around; some in double-walled hives, etc.

RANDOLPH GRADEN.
Wayne Co., Mich., Jan. 26.

Preserving Comb Honey from Moth.

On reading in the Bee Journal the discussion on preserving comb honey from moth, I am compelled to differ from Mr. Green, as to moth not bothering comb honey except when pollen is present. Now this may be the case in a cold climate, but it will not do about here. The only safeguard here against the moth is ice and strong colonies of bees. Last summer I proved to my satisfaction that all honey taken from the hives has moth-eggs deposited on its surface, and if the desired heat is attained they will hatch and destroy the honey. I took off some nice section honey last July, and put some of it in a fly-proof can, and some I put in a refrigerator. (There was no pollen in any of it.) In a few days that in the can showed the fine dust of the moth, and I found very small worms in the sections; while that in the refrigerator had no worms or dust, yet the eggs were on the honey, as I changed places with the section, and the moths on the section, when placed in the cold air, cease to make any more dust, but in a short time the section which was in the cold air first, and had no eggs hatch, when placed in the can the eggs soon hatch, and the moth in his glory was at work eating honey.

I found another lover of honey a few days ago—it is a light-green worm, about $\frac{1}{2}$ of an inch long. I will write about it later.

HOWARD RISHER.
Ouachita Co., La., Jan. 20.

Our '97 Catalog

—OF—

Apiarian Supplies, Bees, Etc.

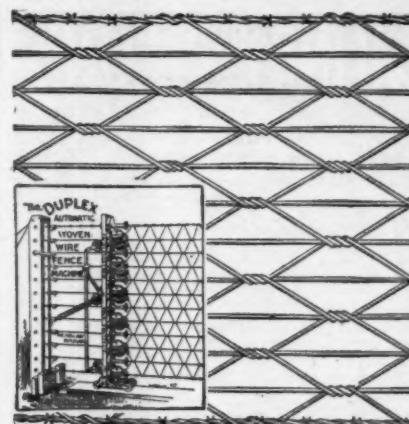
is yours for the asking.

It is full of information. **Write for it.**

I. J. STRINGHAM,
105 Park Place. NEW YORK, N. Y.

APIARY—Glen Cove, L. I.

Mention the American Bee Journal.



The fence here shown is made with the Duplex Automatic Woven Wire Fence Machine, which is made entirely of wood and malleable iron, and is so simple and easily operated that anyone who knows how to turn a grindstone can take it right into the field or any place and make 40 to 60 rods of fence a day, horse-high, bull-strong, pig, chicken and rabbit tight, at a cost for the wire of only 12 to 20 cents a rod. It can be made in a variety of styles or designs, using either plain or barb wire for the top and bottom margin wires, and by using wire pickets, weaving them right into the fabric, ornamental designs can be made suitable not only for farm residences but also city and suburban residences. Messrs. Kitzelman Bros., Ridgeville, Indiana, whose advertisement appears elsewhere in this paper, claim this Duplex Automatic Machine is the result of their 10 years' experience in the manufacture of woven wire fence machines, and is perfection itself. Send for their illustrated catalogue, which fully describes machine, and shows 24 different designs of fence the machine will make. Don't forget to mention that you saw their advertisement in the American Bee Journal.

The Reliable Hen.—The incubator business is taking on astounding proportions. This is true in the use of the machines, as well as in the manufacture of incubators. The latter business could not have attained its present dimensions had it not been for the success of the machines in actual practice all over the country. There has been too much success in the use of incubators and too much money made by this process to claim, at this late day, that the most improved incubators are anything but successful and profitable when correctly managed. We are led to these reflections by receiving the superb 168-page catalogue of the Reliable Incubator & Brooder Co., Quincy, Ill. Their machine is one of the most popular and most largely used. It is made in a careful and workmanlike manner



of the very best materials. Too much cannot be said in favor of the Reliable regulator. The regulator is as near perfect as is possible to attain. One of the strong points in favor of this machine is that they are thoroughly tested in constant practice at the large poultry farms conducted by this concern. The methods followed at these and other successful poultry establishments, together with full directions concerning the management of incubators and the poultry business in general, are given in this 11th annual catalogue, which may be obtained by any one who will send 10 cents to the Reliable Incubator & Brooder Co., Quincy, Ill.; but if in writing them you state that you are a subscriber to the American Bee Journal you can get it free, and in that case need not inclose the dime.

HONEY and BEESWAX MARKET QUOTATIONS.

The following rules for grading honey were adopted by the North American Bee-Keepers' Association, and, so far as possible, quotations are made according to these rules:

FANCY.—All sections to be well filled; combs straight, of even thickness, and firmly attached to all four sides; both wood and comb unsouled by travel-stain, or otherwise; all the cells sealed except the row of cells next the wood.

No. 1.—All sections well filled, but combs uneven or crooked, detached at the bottom, or with but few cells unsealed; both wood and comb unsouled by travel-stain or otherwise.

In addition to this the honey is to be classified according to color, using the terms white, amber and dark. That is, there will be "fancy white," "No. 1 dark," etc.

Chicago, Ill., Jan. 19.—Fancy white, 12@13c.; No. 1, 10@11c.; fancy amber, 8@10c.; No. 1, 7@8c.; fancy dark, 8c.; No. 1, 7c. Extracted, white, 5@6c.; amber, 5@6c.; dark, 4@5c. Beeswax, 25@27c.

Very little activity in the market.

Albany, N. Y., Jan. 29.—Fancy white, 12-13c.; No. 1 white, 11-12c. Extracted, 6-7c.

The honey market is very quiet and stock moving very slowly, even at reduced prices. White clover is not plentiful. Extracted is moving very slowly, but we hope for an improved demand soon.

Indianapolis, Ind., Dec. 31.—Fancy white, 14-15c.; No. 1 white, 12-13c. Extracted, white, 6-7c. Beeswax, 22-25c.

Demand is fair for grades quoted, but no demand for inferior grades.

Boston, Mass., Dec. 31.—Fancy white, 13-14c.; No. 1, 11-12c. Extracted, white, 6-7c.; amber, 5-6c. Beeswax, 25c.

Cleveland, Ohio, Dec. 31.—Fancy white, 14@15c.; No. 1 white, 12@13c. Extracted, white, 6@7c.; amber, 4@5@5c. Beeswax, 22@25c.

There is not very much honey in our market. Selling rather slow. Demand beginning to be a little better. Think trade will be fair in this line this fall.

New York, N. Y., Dec. 31.—Fancy white, 11@12c.; fair white, 9@10c.; buckwheat, 7@8c. Extracted, white clover and basswood, 5@5@5c.; California, 6c.; Southern, 50c. per gallon. Beeswax in fair demand at 26@27c.

The market is quiet and inactive. Demand light and plenty of stock on the market.

Cincinnati, Ohio, Dec. 31.—Comb honey, best white, 10@14c. Extracted, 4@6c. Demand is slow; supply is fair.

Beeswax is in fair demand at 22@25c. for good to choice yellow.

San Francisco, Calif., Jan. 20.—White comb, 9-10c.; amber, 6-7c. Extracted, white, 5-5@5c.; light amber, 4-4@4c.; amber colored and candied, 3@4c.; dark tule, 2@3c. Beeswax, fair to choice, 23-25c.

Kansas City, Mo., Jan. 20.—Fancy white comb, 14c.; No. 1 white, 13@14c.; fancy amber, 12-13c.; No. 1 amber, 11-12c.; fancy dark, 10-11c.; No. 1, 8-9c. Extracted, white, 6-6@7c.; amber, 5@5@5c.; dark, 4-4@4c. Beeswax, fair to choice, 23-25c.

Philadelphia, Pa., Feb. 2.—Fancy white comb, 12-13c.; fancy amber, 8-9c.; No. 1, 8c.; fancy dark, 7-8c. Extracted, white, 5-7c.; amber, 4-5c.; dark, 3@4c. Beeswax, 25c.

Season is getting over for comb honey—very little demand. Extracted in good demand.

St. Louis, Mo., Dec. 30.—Fancy white, 14c.; No. 1 white, 12@13c.; fancy amber, 11@12c.; No. 1 amber, 10@10@11c.; fancy dark, 9@9@10c.; No. 1, 8-9c. Extracted, white, in cans, 6@7c.; in barrels, 5@5@5c.; amber, 4@4@4c.; dark, 3@4c. Beeswax, 26@27c.

Baker stock of extracted honey, 4@5c.; stock very scarce. Fair receipts of comb. Beeswax in good demand.

Detroit, Mich., Jan. 9.—Fancy white, 13-14c.; No. 1, 12-13c.; fancy amber, 11-12c.; No. 1 amber, 10-11c.; fancy dark, 9-10c.; No. 1, 8-9c. Extracted, white, 5@5@5c.; amber, 5c.; dark, 4-4@4c. Beeswax, 25-26c.

Minneapolis, Minn., Dec. 31.—Fancy white, 11@12c.; No. 1 white, 10@11c.; fancy amber, 9@10c.; No. 1 amber, 8@9c.; fancy dark, 7@8c.; No. 1 dark, 6-7c. Extracted, white, 6@7c.; amber, 5@5@5c.; dark, 4@5c. Utah white extracted, 5@5@5c. Beeswax, 23@26c. Market fairly steady for comb and better for extracted than for some time.

Buffalo, N. Y., Feb. 5.—Strictly fancy comb, 1-pound, moving quite well at 9 and 10 cents, while we hear of some grades a little less. No. 2 and other grades range from 7 to 5 cts. Quite liberal amounts can be sold if forced. Extracted, 3-5c. Better write before shipping.

List of Honey and Beeswax Dealers.

Most of whom Quote in this Journal.

Chicago, Ills.

R. A. BURNETT & Co., 163 South Water Street.

New York, N. Y.

HILDRETH BROS. & SEGELKEN,

Kansas City, Mo.

O. C. CLEMOMS & Co., 423 Walnut St.

Buffalo, N. Y.

BATTERSON & Co., 167 & 169 Scott St.

Hamilton, Ills.

CHAS. DADANT & SON.

Philadelphia, Pa.

WM. A. SELSER, 10 Vine St.

Cleveland, Ohio.

WILLIAMS BROS., 80 & 82 Broadway.

St. Louis, Mo.

WESTCOTT COM. CO., 213 Market St

Minneapolis, Minn.

S. H. HALL & Co.

Milwaukee, Wis.

A. V. BISHOP & Co.

Boston, Mass.

E. E. BLAKE & Co., 57 Chatham Street.

Detroit, Mich.

M. H. HUNT, Bell Branch, Wayne Co., Mich.

Indianapolis, Ind.

WALTER S. PODER, 162 Massachusetts Ave.

Albany, N. Y.

CHAS. McCULLOCH & Co., 380 Broadway.

Cincinnati, Ohio.

C. F. MUTH & Son, cor. Freeman & Central avs.

Convention Notices.

NEW YORK.—The Cortland County Bee-Keepers' Association will hold its annual meeting in Good Templars' Hall, at Cortland, Saturday, Feb 13, 1897. H. S. HOWE, Sec.

ILLINOIS.—The seventh annual meeting of the Eastern Iowa Bee-Keepers' Association will meet at Anamosa, Iowa, Feb 10 and 11, 1897. A corps of experimenters have been doing special work in the apiary, and will report. Lay a'! cares aside, and come and enjoy the good things prepared for you.

Andrew, Iowa. F. M. MERRITT, Pres.

ILLINOIS.—The annual meeting of the Illinois State Bee-Keepers' Association will be held at the State House, in Springfield, Feb. 24 and 25, 1897. The State Farmers' Institute meets the same week—including all the State live stock associations—and our Executive Committee, along with them, arranged for this date, in order that the Legislature might be in good working condition. (We all know what for.) There will be an effort made this winter to get a Pure Food Bill past, and that means bee-keepers want a hand in it, to see that the adulteration of honey shall cease FOREVER AND EVER. Two years ago we succeeded in getting an Anti-Adulteration Bill through the Senate, but it failed in the House, only for want of push. Let bee-keepers throughout the State impress upon their Representatives the importance of such a bill, and come to our meeting to refresh their minds on the subject.

Railroad rates will be no greater than a fare and a third, which will be announced later. Our programs will be issued along with the other State Associations named above.

JAS. A. STONE, Sec.

Bradfordton, Ill.

Doctor's Hints

By Dr. PEIRO.

100 State Street, CHICAGO, ILL.

Honey for Coughs.

Old people's coughs are as distinct as that of children, and require remedies especially adapted to them. It is known by the constant tickling in the pit of the throat—just where the Adam's apple projects—and is caused by phlegm that accumulates there, which, in their weakened condition, they are unable to expectorate.

Take a fair-sized onion—a good strong one—and let it simmer in a quart of honey for several hours, after which strain and take a teaspoonful frequently. It eases the cough wonderfully, though it may not cure.

Honey for Stomach Cough.

All mothers know what a stomach cough is—caused by an irritation of that organ, frequently attended with indigestion. The child often "throws up" after coughing.

Dig down to the roots of a wild cherry tree, and peel off a handful of the bark, put it into a pint of water, and boil down to a teacupful. Put this tea into a quart of honey, and give a teaspoonful every hour or two. It is pleasant, and if the child should also have worms, which often happen, they are pretty apt to be disposed of, as they have no love for the wild-cherry flavor.

Pin-Worms.

Mrs. Bemis asks about these uncomfortable parasites. In appearance they much resemble grains of cooked rice. Sometimes a hundred or more infest the extreme lower bowels, causing intense itching, crowding each other out into the young one's trousers. Take a tablespoonful of the wild-cherry-bark tea, above mentioned, put it into a pint of water and inject it in the bowels, when the child is put to bed. Two or three such applications disposes of these pestiferous nuisances.

Honey on Frost-Bites.

If your ears, fingers or toes become frozen nothing will take the frost out of them sooner than if wrapt up in honey. The swelling is rapidly reduced, and no danger occurs.

Honey and Cream for Freckles.

Have you tried a mixture of honey and cream—half and half—for freckles? Well, it's a good thing. If on the hands, wear gloves on going to bed.

Beeswax Wanted for Cash

Or in Exchange for

Comb Foundation.

Highest Price Paid.

If you want your Wax Work into Foundation, satisfactorily, promptly, and at the lowest price, send it to me.

Write for Price-List and Samples.

GUS DITTMER,

AUGUSTA, WIS.

GAMES FREE & useful articles for only 2-5mo. subs. raiser wants this leading poultry paper. Sample free. Address POULTRY KEEPER Co., Box 44 Parkesburg, Pa.

Mention the American Bee Journal.

WANTED—ATTENTION!

SEE HERE, Friend Bee-Keeper, the best goods are none too good, and the lowest prices are none too low for the present times, so down go the prices for 1897 on Full Line of Bee-Keepers' Supplies.

I defy competition in quality and workmanship. Working Wax into Foundation when sent to me, a specialty. Write, without fail, for Catalog. My prices are worth looking at. Wax wanted at 26c cash, or 29c in trade, delivered. August Weiss, Hortonville, Wis.

6A8t Mention the American Bee Journal.

Bottom Prices

**BRING US BIG TRADE.
GOOD GOODS KEEP IT.**

If you want the best supplies that can be made at a little less cost than you can buy the same goods for elsewhere, write to us for low prices. 1897 Catalogue soon ready—ask for it and a free copy of **The American Bee-Keeper** (36 pages).

Address,
**THE W. T. FALCONER MFG. CO.,
JAMESTOWN, N. Y.**



EXPANSION AND CONTRACTION is what destroys most wire fences. We have a way of completely overcoming this difficulty in the construction of the **KEYSTONE FENCE**. That's one reason why it outlasts all others. Full particulars in our book on **fence construction—FREE**.

KEYSTONE WOVEN WIRE FENCE CO.,
No. 3 Rush Street, Peoria, Ill.

Mention the *American Bee Journal*.

+ MONEY SAVED IS MONEY GAINED. +

**THE ROYAL UNION
Life Insurance Company
DES MOINES, IOWA.**

The Iowa Policy

Is one that definitely promises to keep an accurate account with you; credit your premiums and interest, charge the actual expense and mortuary cost, and hold the remaining funds subject to your order.

Agents Wanted.

JOHN B. KING, GENERAL AGENT.
Suite 513 First Nat'l Bank Bid'g.
20Atf CHICAGO, ILL.

PATENT WIRED COMB FOUNDATION

Has No Sag in Brood-Frames

Thin Flat-Bottom Foundation

Has No Fishbone in the Surplus Honey.



Being the cleanest is usually worked the quickest of any Foundation made.

J. VAN DEUSEN & SONS,
Sole Manufacturers,
Sprout Brook Montgomery Co., N. Y.

**Muth's HONEY-EXTRACTOR
Square Glass Jars.**

Root's Goods at Root's Prices.

BEE-KEEPERS' SUPPLIES in general, etc., etc.
Send for our new catalog.

"Practical Hints" will be mailed for 10c.
in stamps. Apply to—

Chas. F. Muth & Son, Cincinnati, Ohio.
Mention the *American Bee Journal*.

YOUR BEESWAX !

UNTIL FURTHER NOTICE, we will allow 28 cents per pound for Good Yellow Beeswax, delivered at our office—in exchange for Subscription to the **BEE JOURNAL**, for Books, or anything that we offer for sale in the **BEE JOURNAL**. Or, 25 cts. cash.

BEESWAX WANTED

—FOR—

♦♦ Foundation Making. ♦♦

Send For OUR CATALOGUE,
SAMPLES OF FOUNDATION,
ADVICE TO BEGINNERS, Etc.

Address,

CHAS. DADANT & SON,

HAMILTON, ILL.

4¹ SECTIONS 4¹ SECTIONS



Our business is making Sections. We are located in the basswood belt of Wisconsin; there the material we use cannot be better. We have made the following prices:

No. 1 Snow-White.

| | | | |
|--------------|--------|--------------|--------|
| 500..... | \$1.25 | 500..... | \$1.00 |
| 1000 at..... | 2.50 | 1000 at..... | 2.00 |
| 3000 at..... | 2.25 | 3000 at..... | 1.75 |
| 5000 at..... | 2.00 | 5000 at..... | 1.50 |

If larger quantities are wanted, write for prices.

**Price-List of Sections, Foundations, Veils, Smokers, Zinc, Etc.,
Sent on application.**

6A35t

MARSHFIELD MFG. CO., Marshfield, Wis.

Cut Prices to Move Stock !!

There are a few items of desirable stock left of the goods secured of Thomas G. Newman when we took charge of his supply business here. In order to close these out and make room for fresh, new goods, we have decided to offer these at prices which will make them go.

The following is the list, which will be corrected as the stock is sold; if you see what you want here, order AT ONCE, or you may be to late:

V-Top Langstroth Frames, 75c per 100; 250 for \$1.25; 500 for \$2.

All-Wood Frames, pierced for wire, same price while they last.

50 Comb Honey Racks, to hold sections on the hive, flat, \$1.00 for the lot.

No. 3 VanDeusen Thin Flat-Bottom Fdn., in 25-lb. boxes, \$10.50 a box.

Wakeman Section-Press, 50c each (old price, \$1.25).

Townsend Section-Press, 50c. (old price, \$1.)

Hill Feeders, quart size, 8c each, 75c per doz. (less than half old prices).

Hill Smokers, 40c each; by mail, 60c.

Quinby Smokers at 50c, 70c, and \$1.00 each—20c extra by mail.

Jones' Frame-Pliers, 10c each; by mail, 10c extra (old price, 25c and postage.)

1896 Dovetailed Hives at Special Prices.

Desiring to make room for new goods, we offer from stock at this branch, No. 1 Dovetailed hives, 8-frame complete, with sections, foundation-starters, and nails, at \$5.75 for 5; \$10.50 for 10; \$20.00 for 20; No. 1E, same without sections and starters, \$4.75 for 5; \$8.50 for 10; \$16.00 for 20; 10-frame complete, 20 cts. each extra; 10-frame E, 15 cts. each extra. Other Hives in stock at a similar reduction.

If wanted by Freight, add 25c for cartage on orders for less than \$5

THE A. I. ROOT COMPANY,

Geo. W. York, Manager.

118 Michigan Street, CHICAGO, ILL.